

Missouri: Louisiana, 31st, cisterns generally empty and creeks dried up; Glasgow, 31st, many springs stopped running. "The Missouri Weather Service" reports drought very severe in the north, northeast and central sections of the State, vegetation damaged.

Rainfall during June, received too late to be used in June Review.—*Arizona:* Whipple Barracks, Ft. McDowell and Ft. Mojave, none; Ft. Lowell, 0.20 inch.; Ft. Bowie, 1.50; Ft. Verde, 0.14; Ft. Apache, 0.53; Camp Thomas, 0.55. *California:* Benecia Barracks, Angel Island, Presidio, Oakland and Poway, none. Ft. Gaston, 0.12. *Colorado:* Ft. Lyons, 0.55; Ft. Collins, 0.86. *Dakota:* Ft. Stevenson, 4.10; Ft. Sisseton, 6.00; Ft. Sully, 2.35; Ft. Totten, 3.17. *Idaho:* Ft. Lapwai, 1.15; Lewiston, 1.07. *Montana:* Ft. Benton, 4.50; Ft. Shaw, 2.39; Ft. Ellis, 8.01; Ft. Keogh, 0.51; Ft. Logan, 0.49; Ft. Assiniboine, 2.44. *Oregon:* Ft. Stevens, 3.15; Ft. Klamath, 0.38. *Washington Territory:* Ft. Canby, 2.58; Ft. Townsend, 0.92; Dayton, 1.00; Neah Bay, 1.27; Bainbridge Island, 2.21.

RELATIVE HUMIDITY.

The percentage of mean relative humidity for the month ranges as follows: New England, from 62 to 87; Middle Atlantic States, 59 to 88; South Atlantic States, 62 to 80; Eastern Gulf States, 65 to 73; Western Gulf States, 64 to 76; Ohio valley and Tennessee, 60 to 76; Lower Lake region, 61 to 71; Upper Lake region, 67 to 77; Upper Mississippi valley, 61 to 69; Missouri valley, 59 to 62; Red River of the North valley, 69 to 73; Eastern Rocky Mountain Slope, 54 to 73; Texas, 62 to 77; Middle Plateau, 17 to 33; California, 31 to 82; Oregon, 57 to 69. *High stations* report the following averages not corrected for altitude: Pike's Peak, 71; Mt. Washington, 82; Virginia City, 37; Denver, 47; Santa Fe, 40.

WINDS.

The *prevailing directions of the wind* during July, 1880, is shown by arrows, flying with the wind, on chart No. II. To the east of the Rocky Mountains the predominating winds have been *southerly*, with an easterly trend over Texas, and a westerly one from the Eastern Gulf and Atlantic coasts to the Lake region. At the Rocky Mountain stations, over the Middle and Northern Plateau Districts and North Pacific region, the directions are *northwesterly*. On the summit of Mt. Washington, N. H., the direction is NW, and the continuous record of the wind velocity shows a total monthly movement of 17,943 miles; the maximum hourly velocity during the month was NW, 72 miles on the 10th. The same data for the summit of Pike's Peak is SW., 8,493 miles, and SW., 44 miles on the 10th. Maximum velocities exceeding 50 miles per hour were recorded at Umatilla (SW., 52, on the 18th); North Platte, (NW., 80, on the 3rd) and Chincoteague, (SW., 53, on the 1st.)

Total Movements of the Air.—The following are the *largest* total movements in the various districts: Mt. Washington, (summit of) 17,943 miles; Cape Lookout, 10,964; North Platte, 9,643; Rio Grande City, Tex., 9,594; San Francisco, 9,186; Cape Hatteras, 8,904; Chincoteague, Va., 8,768; Indianola, 8,554; Delaware Breakwater, 8,510; Pike's Peak, (summit of) 8,439; Umatilla, Or., 8,392; Portsmouth, N. C., 8,365; Wood's Holl, 7,892; Thatcher's Island, 7,822. The *smallest* are: Lynchburg, 1,364 miles; La Mesilla, N. M., 1,440; Augusta, 2,013; Silver City, N. M., 2,057; Visalia, Cal., 2,378; Nashville, 2,342; Des Moines, Iowa, 2,406; Morgantown, 2,543; Springfield, Mass., 2,777; Socorro, N. M., 2,872; Knoxville, 2,940; Cincinnati, 2,997.

Local Storms.—Jacksonburg, Ohio, 2nd, 4 p. m., small tornado passed two miles south of village in a direction from SW. to NE., width of track about 60 rods. "There were two inverted cones of vapor, one reaching from the clouds nearly to the earth and then joining the apex of the lower one extending upward from the ground. During its passage it was accompanied by a noise similar to the violent escape of steam. Sheaves of wheat and many other objects were drawn upwards and quickly lost sight of. The ground over which the storm passed appeared as if drenched by a flood." Cairo, Ill., 2nd, 1:35 p. m., very heavy wind-storm, lasting about 15 minutes, unroofing buildings and blowing down fences and trees. Chattanooga, Tenn., 2nd, severe wind-storm, blowing down trees and fences; 3rd, 6:25 to 6:47 p. m., severe NW. storm, during which the wind reached a velocity of 60 miles per hour for a period of 5 minutes, and averaged 48 miles for 15 minutes, unroofing buildings and uprooting trees, damage \$1,500. Reports from Walker and Catoosa counties, in northern Georgia, show exceedingly violent storms on this date, and great loss to agricultural interests. Columbia, S. C., 5th, violent tornado, unroofing buildings, uprooting trees and destroying crops and fences. Clear Creek, Neb., 7th, 4:30 p. m., violent tornado approached from the southwest, passing about 3 miles north of station; 15 to 20 buildings were destroyed and great damage caused to crops. A large quantity of water was reported to have been taken out of Platte river as the storm crossed it. Hanover, N. H., 16th, afternoon severe tornado passed over southeastern part of village; "many buildings unroofed, several literally torn to pieces; trees all along the course of the storm were torn up by the roots and large branches were twisted off and carried long distances; course, SW. to NE. and path of destruction about two miles long and 200 rods wide;" Portsmouth, N. C., 28th, 5:30 p. m., whirlwind struck the beach on south side of inlet forming dense pillar of sand with rotary motion from right to left and moving from SE. to NW., a distance of three miles. It then suddenly receded southeastward to the sea where it disappeared. Diameter of whirl 30 yards.